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ZINC PHOSPHIDE: A FIELD STUDY WITH CALIFORNIA GROUND SQUIRRELS

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ABSTRACT: We determined the efficacy for 1.0% and 2.0% zinc phosphide (Zn_3P_2) oat baits when applied by either hand or broadcast baiting for controlling California ground squirrels (Spermophilus beecheyi). The Environmental Protection Agency required this efficacy data from the California Department of Food and Agriculture (CDFA) as partial fulfillment of the reregistration requirements for zinc phosphide labels. The CDFA contracted with the Denver Wildlife Research Center to conduct the study. On a 2,000-acre ranch located outside of Fountain Springs, California, 12 treatment units (TU's) were established on annual rangeland. Radio telemetry was used to monitor ground squirrel activity pretreatment and mortality posttreatment; 25 ground squirrels per TU were trapped and radio-collared. After 300 ground squirrels were radio-collared, we applied the bait. In hand baited TU's, 11 g of either 0.0%, 1.0%, or 2.0% (Zn_3P_2) bait was applied per active burrow system. Each concentration was applied to 2 TU's. In broadcast baited TU's, the same 3 Zn_3P_2 concentrations were each applied at 6 pounds per swath acre using an ATV equipped with a spreader. However, only areas containing burrow systems were baited. Again, each concentration was applied to 2 TU's. After baiting, ground squirrels dying on or near the surface were collected and ground squirrels showing no movement were excavated. A final report is being prepared. Preliminary analysis showed: Hand baiting - mortality was 0% for the 0.0%, 100% for the 1.0%, and 92.3% for the 2.0% (Zn_3P_2) concentrations; Broadcast baiting - mortality was 0% for the 0.0%, 92.3% for the 1.0%, and 96.3% for the 2.0% (Zn_3P_2) concentrations.